

VIRTUAL MEETING OF THE BIG DATA AND ARTIFICIAL INTELLIGENCE (EX) WORKING GROUP

COMPONENTS OF A MODEL GOVERNANCE FRAMEWORK

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FOCUS OF THIS PRESENTATION

One of the 2021 Proposed Charges for the Big Data and Artificial Intelligence (EX) Working Group under the Innovation and Technology (EX) Task Force is to:

*“Research the use of big data and artificial intelligence (AI) in the business of insurance and evaluate existing regulatory frameworks for overseeing and monitoring their use. Present findings and recommend next steps, if any, to the Innovation and Technology (EX) Task Force and which may include **model governance for the use of big data and AI** for the insurance industry”* (Source: https://content.naic.org/cmte_ex_itf.htm)

This presentation introduces the development of a model governance framework for these models based on experience acquired on other models (e.g., capital, catastrophe) by some NAIC (E) Committee working groups (e.g., ORSA, RBC).

BACKGROUND

The introduction of ORSA requirements in 2012 for insurers and the expansion of the RBC formula to include Catastrophe Risks have brought capital models and catastrophe models onto the radar of regulators.

These models are widely used to make important business decisions by insurers. For this reason alone, regulators have had to answer important questions, such as:

1. How are these models used?
2. What are the risks associated with the use of these models?
3. Should these models be examined by the regulator? If so, how? (“Trust but verify”)
4. Should regulators develop more requirements? How prescriptive?

These are all questions that also apply to AI models.

BACKGROUND

The NAIC has been working with regulators, industry and vendors in a collaborative manner for the past two years on answering these questions.

The approach followed is to:

1. Engage with industry and vendors to understand the models
2. Develop review procedures for regulators
3. Test these procedures in the field by conducting model walk-throughs with industry (on a voluntary basis) and vendors
4. Train regulators with the help of vendors

All the above is currently taking place. Next steps will be to:

5. Enhance the regulatory requirements (such as NAIC ORSA Guidance Manual, RBC Cat instructions)
6. Operationalize the review procedures by bringing them into the financial analysis and financial examination handbooks.
7. Develop tools for regulators (for example, wall-through checklists)
8. Consider not just solvency implications, but also rating review implications (esp. for CAT models)

BENEFITS OF MODEL GOVERNANCE

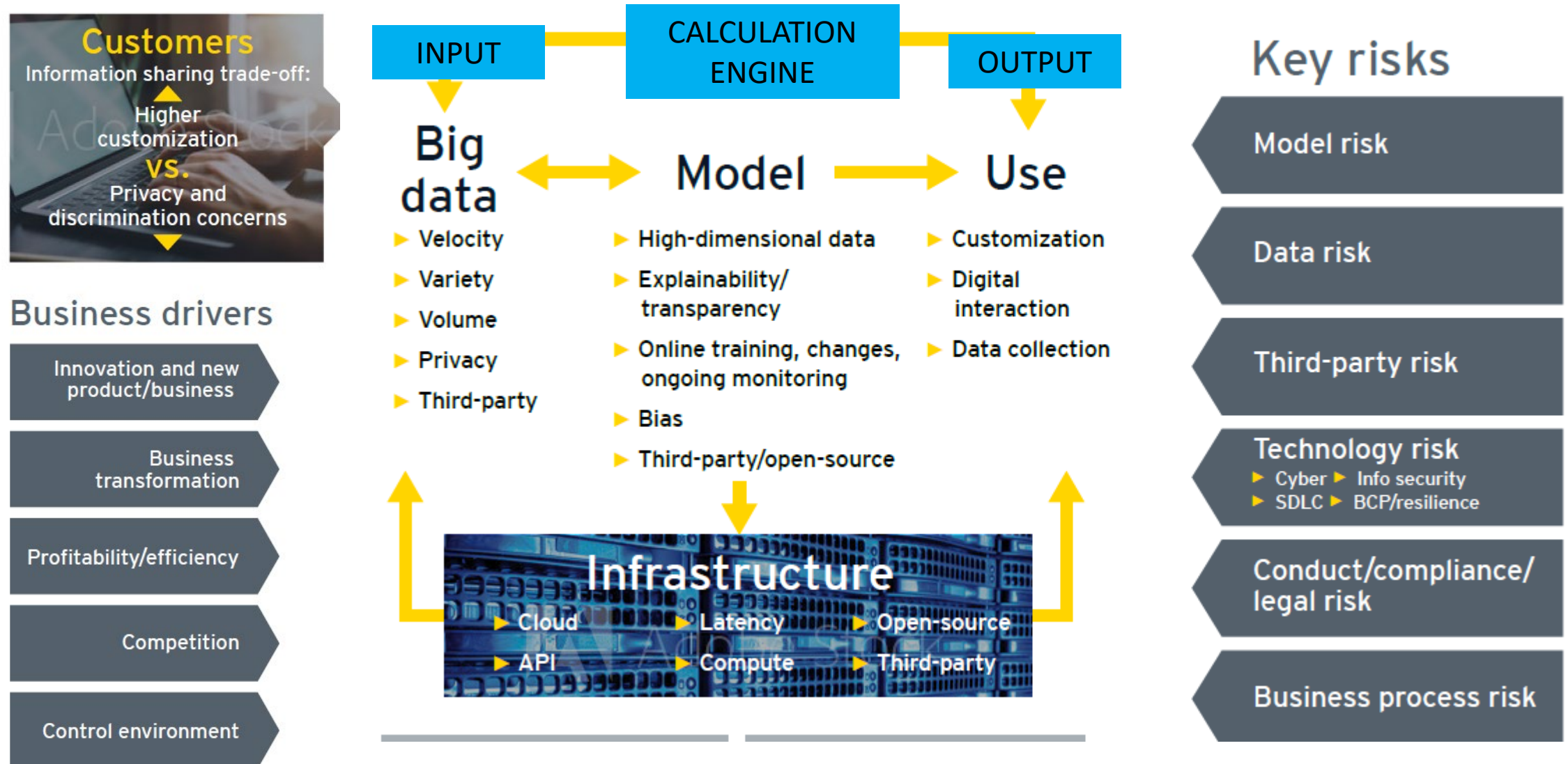
Insurers that use capital models and catastrophe models have developed model governance frameworks to help their use of these models:

1. Minimizing risks arising from these models
2. Supporting the business use of model outputs to their Senior Management teams
3. Providing assurance on model outputs to their Boards of Directors
4. Providing assurance on output and use to the regulators (US and non-US)

The models need to be run for some time before a robust model governance framework can be in place. *AI models are fairly new (compared to other models).*

- Start with high level requirements
- Test (can they be used by insurer? can they be verified by regulator?_
- Revise

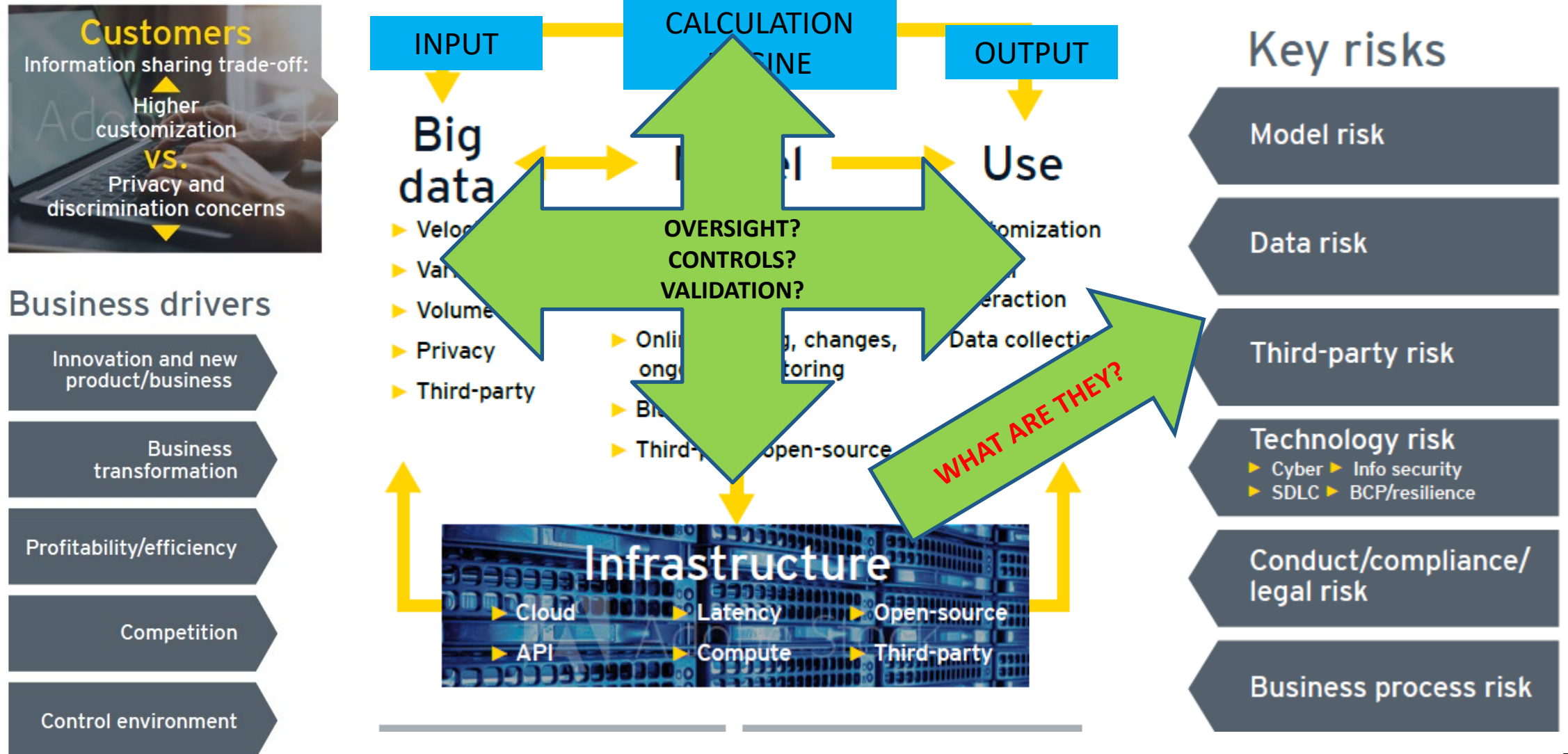
STARTING POINT: THE ANATOMY OF THE MODEL



Source: ey-building-the-right-governance-model-for AI/ML

NEXT: USERS AND REGULATORS NEED ASSURANCE ON THE MODEL

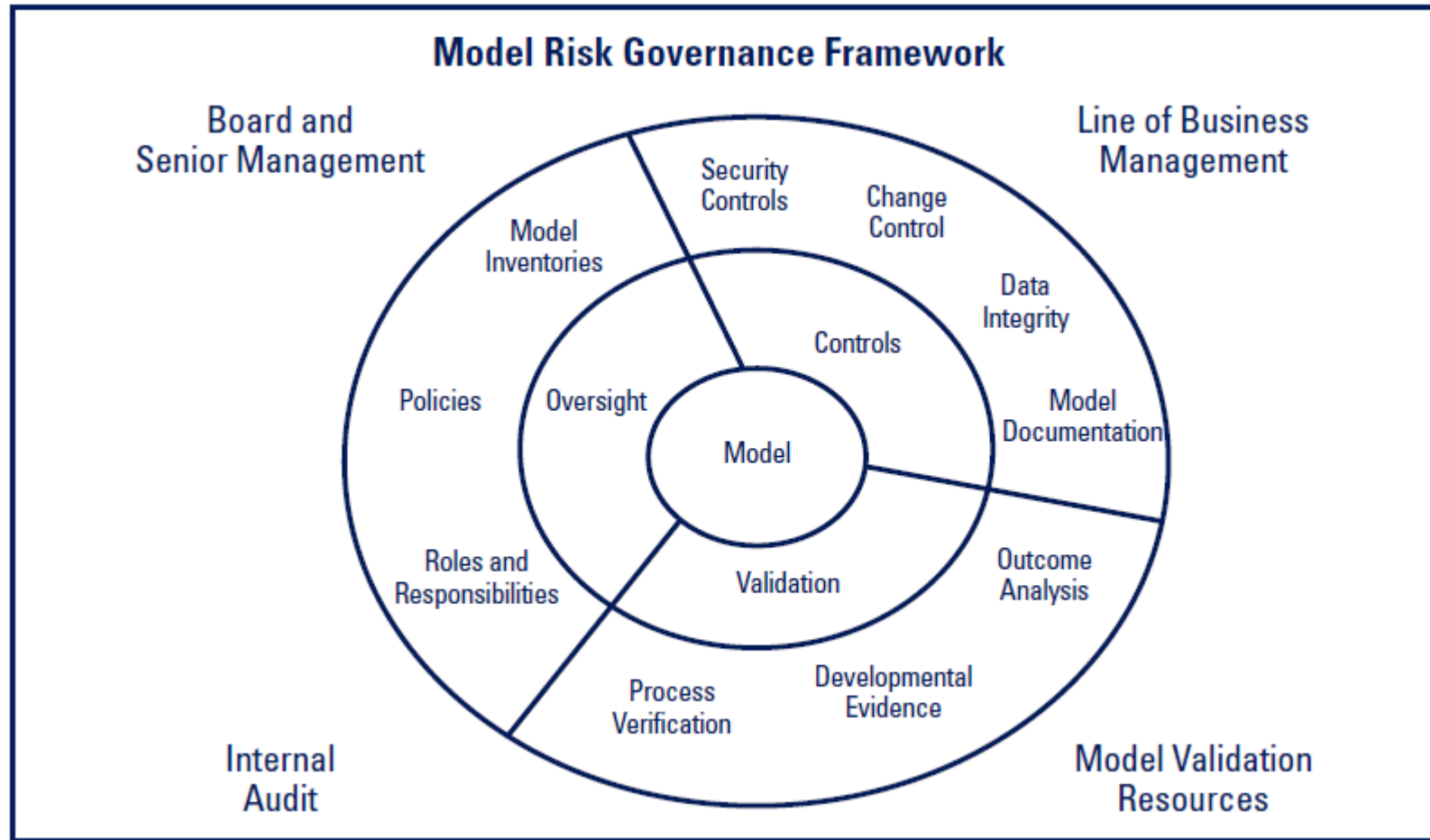
Attachment One



Source: ey-building-the-right-governance-model-for AI/ML

FIRST, ACHIEVE CONSENSUS ABOUT THE ANATOMY OF THE MODEL AND THE KEY RISKS

THEN, DEVELOP MODEL GOVERNANCE REQUIREMENTS



Source: Supervisory Insight (Winter 2005)

1. Start with Oversight and Controls
2. Leave Validation for later (when models are more mature and documented)
3. Develop baseline requirements for each component. Let the insurer fill in the details.
4. Organize the set or principles (such as the AI Principles adopted in August 2020) under baseline requirements for each component
5. Think of how to verify

OBSERVATIONS

- Development and operation of model governance frameworks are well-established in the risk management world. **JUMP START THE DEVELOPMENT PROCESS OF THIS FRAMEWORK BY LEVERAGING EXISTING PRACTICES**
- Model governance frameworks for Big Data and Artificial Intelligence models need to be tailored to reflect the risks that are unique to them. There is a lot of knowledge available as well as appetite for knowledge sharing with regulators. **TAILOR THE PROCESS IN A COLLABORATIVE AND INCLUSIVE MANNER**
- **A framework is as good as it is USED (by the insurance industry), adds REGULATORY VALUE (deeper insight into risks) and can be VERIFIED by the regulator (financial or market conduct)**

MODEL GOVERNANCE FRAMEWORK DEVELOPMENT PROCESS

Step1

- Agree the anatomy of the AI model (i.e. Key Components)

Step2

- Create consensus on Key Risks associated with Big Data and AI model

Step 3

- Draft baseline requirements around each component for users to build on

Step4

- Draft procedures for departments of insurance examiners (**don't leave it for later**)

Step5

- Use and amend (over time)

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